

## **SLOW, OPEN, and IMPERFECT:**

### **A Comprehensive Approach to Teaching Freshman Architectural Design Studio**

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## **INTRODUCTION**

The Freshman Year of the Architectural Design Studio is both challenging and vital for students. It requires the faculty to have a clear awareness of the challenges and opportunities during the year.

Students are effectively in culture shock. They arrive from a culture of single, right answers into a culture of repetitive experimentation, exploration, failure, and more experimentation. Many are away from home for the first time. Incoming freshman architecture students typically have limited exposure to the profession of architecture and design. Their skills and past experiences vary widely.

Over the last 5 years, we have noticed a shift in the students that we receive. They arrive hugely distracte<sup>1</sup>, choosing their phones over possible new friends standing an arms length away. They are afraid to act without parental participation. They are homesick and not clear how to feel at home in a new place. They would choose distraction over involvement if given the choice. We found this past fall, that speed in life, translated into more accidents in studio and shop as well. Tools were left running and there seemed to be a general carelessness.

We also get students who have huge talent and desire but lack the knowledge of how to go about it. They too are very wired in. Along with developing a strong curriculum designed to introduce and strengthen core design abilities, the faculty must be prepared to handle a variety of additional responsibilities that help orient new students to the discipline of architecture.

We believe that the act of making things takes time and slows you down. We believe also that drawing by hand takes time and slows you down. We have designed a comprehensive architectural design studio model to provide our diverse student body, a solid foundation for the continued study of architecture. It is simple and straightforward, starting with the basic design of a joint and layering in complexity and new ideas over time.

The fall semester presents us with a large cohort of students who are very young and inexperienced. The challenge is to work with these often complex forces, to allow their innate creativity to blossom, to build the confidence of

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<sup>1</sup> Jean M. Twenge, The Atlantic, Sept 2017. "Have Smartphones Destroyed a Generation?"

Robinson Meyer, The Atlantic, Aug 2017, "Your Smartphone reduces Your Brainpower, Even If It's Just Sitting There".

Adrian F. Ward, Kristen Duke, Ayelet Gneezy, and Maarten W. Bos, Journal of the Assoc. for Consumer Research, The University of Chicago Journals, April 2017, "Brain Drain: The Mere Presence of One's Own Smartphone Reduces Cognitive Capacity",

Rob Nixon, Blue Mountain Center, Residency Program, 2018, "Reflections on the Cell Phone Policy".

young professionals, to properly support the ones who feel confused, and to retain as many students as possible who show innate talent and enjoy the process of architectural design. We introduce fundamental ideas about design, proportion, scale, materials, joinery, the body inhabiting space, creative risk-taking, exploration, and craft. We seek to develop rigor and precision in their work. The fall and spring semesters have a slightly different emphasis and tone as the curriculum builds on the skills the students develop over two semesters and they become more acclimated to the studio environment and culture.

## **COLLABORATIVE TEACHING METHODS**

We believe that collaboration among faculty is imperative to the success of our students. A collaborative pair can move swiftly. We bring varied experience and skills to the team but, as collaborators, we always have two creative brains addressing each situation in studio. Our teaching team also includes 8-10 of our best graduate students who are always equipped with insightful thoughts about the work as well. We usually have 100-120 students that we work with. Our speed, flexibility, and ability to respond to varied needs is critical to our overall success. Our strongest results appear when we work together, accept input, adjust ideas, and collectively decide on the most appropriate and promising response. We have created a “collective attentiveness”<sup>2</sup> and operate as an umbrella over the entire freshman design studio.

We select our TAs very carefully and mentor them as well. We look first for excellence in design and presentation skills, and secondly for evidence of a willingness to listen, collaborate, and guide our young students. We have a very open dialogue with this impressive group of young designers and they are an integral part of our collaborative team. We work to support them and acknowledge their expertise while keeping track of how everything is functioning as a whole. Sometimes they just need another set of eyes on a situation or set of drawings, or simply reassurance. We meet with our teaching team before every studio. We have organized the Freshman Design Studio to be collaborative in general, so that each of the faculty members is available to any of the TAs and also to any of the students, at any time.

## **STUDIO CULTURE – The Setting for Creative Work**

### **CRITIQUE CULTURE – COLLABORATIVE CULTURE**

As we work to be supportive, we also strive to establish academic excellence. Our job is to identify students’ early, intuitive and process work, and describe it in very specific, architectural language. Students then begin to learn to do this for themselves. We provide professional feedback, make suggestions, engage in dialogue, ask questions, and seek student input. Critique is a way to illuminate idea and intention and is essential to learning. In working with Freshman Architecture students, we have discovered that students frequently resist our input as they believe their ideas are no longer original or purely theirs. We seek to instill a collaborative culture here as well, where the more we can interact on ideas, the stronger their work becomes. Fundamentally, it is always their work and no one else’s. We also evaluate student performance by how well they listen to input, how effectively they are able to understand and apply it, and how well they are able to move forward independently in their work.

### **BEING PRESENT + ATTENTIVE + ENGAGED IN STUDIO**

We have for the past year initiated an official policy (in the syllabus) of no cell phones or computers allowed in studio during our studio hours. Music is desirable as it creates a heartbeat in studio. Ear buds and movies are also forbidden so that students may hear what is being said and interact with those around them. We feel this has made the students very present while we are there to teach them, and also has enhanced their ability to form

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<sup>2</sup> Ronald Epstein MD, *“Attending, Medicine, Mindfulness, and Humanity”*, 2017, Scribner, An Imprint of Simon & Schuster, Inc., 1230 Ave. of the Americas, NY, NY.

friendships within studio. They have respected this and recognized the benefits though it does require enforcement at times.

### ***GOALS in TEACHING – What We Care About***

We introduce incoming freshmen architecture students to a culture of exploration, discovery, and dialogue. As a team, we have developed strategies to instill curiosity, to guide students to invest in a creative process through rigorous exploration and avoidance of preconceived solutions, and to raise the bar on the quality of the work.

## **STYLISTIC TEACHING STRATEGIES**

### ***REGULAR OPEN DIALOGUE WITH STUDENTS***

We believe that it is critical for students to realize that there is not just one right way of doing things and that each faculty and TA will have a different way of reviewing a project. For this reason, we try to have regular open dialogue with, and in front of, the students. We ask each other for input and we ask the students as well. We bring different ideas to the conversation, and it is good to “publicize” that. One small spark of an idea may fuel another idea. We feel it is beneficial to gather the students together frequently, even if briefly, and to focus on the work. It allows us to think collectively and makes us all feel more like a team.

### ***TRANSLATION, TRANSFORMATION, DEVELOPMENT***

We guide students to develop a disciplined approach, rather than to project a final outcome onto their project based on what is familiar to them. Their intuitive work is based in creativity and when they overthink the solution, it is usually based on a memory of what they have experienced. Transformation may occur conceptually, in drawing, or in model form. It is the development of an idea through a series of connected or related steps. We talk about how things may be transformed or altered, through material changes, scale shifts, proportional alterations, rotations, and the like.

### ***CREATIVE RISK***

We coach students to trust the design process and to be willing to take creative risks, though the outcome is uncertain. We also encourage them on a regular basis to be aware of and to listen to their intuitive response to creative tasks as those responses are typically profound and referenced repeatedly during critiques. We intentionally frame project statements so that students are pushed out of their “comfort” zone, and we discuss this. We seek to push the design process away from a method of controlling the outcome to one of discovering of a solution.

### ***FAILURE + CREATIVITY***

When we ask students to take a creative risk and to experiment, we are also asking them to be willing to risk failure. As with scientists, designers are working to come up with something new and original. It is virtually impossible to do this without failure. Failure is a healthy part of the design process and of learning. As designers, we are more able to present ideas if we have looked at all of the possibilities and explain why some things did not work so well. The alternative to failure is stasis, and that leaves little to speak about, so failure is the way to success.

## **TECHNICAL TEACHING STRATEGIES**

### ***REDUNDANCY / REPEATING IDEAS / CIRCLING BACK***

We have found that just presenting something to freshman students does not guaranty clarity for them. By engaging them in specific dialogue and exercise, we can measure how much of our lesson has been internalized and understood, and adjust our plan immediately. We try to be flexible in taking more time to clarify lessons before we move on again.

## **SHORT DEADLINES FOR PROCESS WORK**

With poor time-management skills, too much time to do an assignment allows students to waste time. With lack of clarity about their new discipline, they will resist work on an assignment if given a week to do so. We give short deadlines to enable us to observe progress and address problems promptly.

## **PUBLICATION OF WORK**

This is a key principle in our teaching. If the students ultimately have a week to execute a drawing of excellence, we give a deadline to see this drawing initiated in 2 days. We ask everyone to post the drawings for a walk-around review. We ALL walk around and observe. This is critical. It allows them to see other students' success and strenuous attempts, and to gain ideas/techniques/inspiration for their own drawings. It allows us as faculty to examine where the students are in their work. We frequently pull a selection of drawings that we feel are excellent or moving in that direction, to provide the basis for a good dialogue. We pin them up, gather all of the students informally and talk openly and candidly about the work. We focus on the successful tactics, talk about them, share them openly, ask students to describe techniques and to make their own observations. We get down to tiny details of what it takes to craft an exceptional drawing. This also describes to them the rigor and fastidiousness and time it takes to make good work. We speak about the weaknesses of these drawings as well so that the students with successful starts know it is not perfect and there is still work to be done. Students are very reluctant to look over a peer's shoulder to view his/her work. But knowing that this is how work gets better, we make it an integral part of our studio culture.

## **FUN**

We try to spin the work in a way that it seems fun as well as challenging. We believe that learning to draw beautifully by hand is fundamental to learning architecture as it is part of the thought process of architectural design. Inspired by past faculty experience where drawing culture was predominant, students were challenged to "Draw like angels, draw! draw! draw!.." In an attempt to channel that energy and goal, we have developed an "angel stamp" with which we can stamp drawings that we feel are moving toward excellence. It is a playful way to give positive reinforcement and interject a bit of healthy competition. When we first introduced this, we wondered if it was silly or juvenile, but we quickly saw that the students were all striving to have the angel stamp on their drawing. It is also a way to say that we are looking for more than just a drawing. We are looking for magic...and this comes from the things we have been teaching including, rigor, taking creative risk, experimenting and more rigor. We playfully referred to the drawings as the Sensational Axon, the Telling Section, the Almighty Plan.

We occasionally try to do something unexpected like a foreign film and pizza, but nothing boring or slow. We try to make it appropriate to the studio and to fit within our study. We like to reward good, hard work.

## **COMPREHENSIVE STUDIO EXPERIENCE – FROM LANGUAGE TO BUILDING DRAWING TYPES**

Students are introduced to a range of specific drawing types, over the course of the year, that serve as the foundation for representing and communicating their ideas.

## **DRAWING TECHNIQUES**

Drawing is a very powerful way in which architects and designers communicate. We teach students to draw beautifully by developing a full command of hand drawing craft and technique. Exquisite presentation drawings are persuasive to viewers and clients as they create emotion and atmosphere, but they also aid designers in being able to visualize and develop their own ideas. Computer drawing programs help students in developing their ideas. Construction Documents are a way to communicate ideas precisely, in preparation for building. Students

learn how to add emphasis to their drawings by using specific drawing techniques that influence them to think in a more detailed way.

### **PROGRAM DEVELOPMENT / CONCEPT**

We seek to provide non-traditional programs as we are seeking non-traditional responses. We have students invest in conceptual development either by crafting a narrative or a collage. A conceptual response to a condition we provide is fundamental.

### **MODELING**

We focus the freshmen on wood for the entire year. They begin by designing a 3-part wooden joint. From this they develop a system that will support the weight of the body. Finally, they extend their system again to make space. Fasteners are forbidden throughout the year. As a “school of making”, we encourage many iterations of an idea through models as the development of ideas is clear.

### **FULL SCALE CONSTRUCTION**

Students learn a great deal about architectural design by actually building at full scale. It shifts everything into a new gear, beyond the discussion of models on tables and drawings on walls. Through actual building, we are able to emphasize the critical importance of a solid concept, of economy, and of precision in work. This in turn develops a sense of responsibility for the work, something otherwise hard to teach. These things become essential rather than abstract. The work develops from those originating ideas to a real space with an embedded experience, both through the making and the occupying. Students also become more comfortable in the shop using a variety of tools, to perform a variety of specific tasks.

### **GROUP COLLABORATION**

Because of the scope and expense of the work, students are required to work in collaboration with their studio-mates in groups. They are introduced to group dynamics and collaborative thinking. We discovered that this was an enormous challenge as students were not particularly good listeners or sharers and egos became involved.

We tried to foster a dynamic in which everyone had a voice and was able to make a contribution. It required organization and specific job descriptions to begin to tease some of this out. We encouraged listening skills as the strongest act of leadership, along with being responsible for the work itself. We are now introducing a segment, up front, about group dynamics, listening, and consensus-building, led by an expert in the field. When students finally developed a way to make decisions together and became engaged in the production of the work at full-scale, a sort of toughness, rigor, and enthusiasm set in. The students became invested in and proud of the work. And since it was built in a more public realm than studio, the final review had both a formal as well as a celebratory component to it.

### **CONSTRUCTION DOCUMENTS IN STUDIO**

In engaging in full-scale construction within the studio, we are required to engage in having students prepare construction documents. This is an interesting topic since traditionally, this is not taught in architectural school, and especially not in a curriculum that focuses on design. However, we felt that they had to know what wood was required and what it would cost, precisely how it would be cut, how it would be stacked and organized for delivery, and how the pieces would be assembled. We instructed them about conventional drawing formats for labeling and dimensioning, in addition to just working in scale, or a variety of scales on a single sheet. It proved to be challenging for them and for us as well. In the process of developing these drawings, the students became more attentive to the intricacies of architecture, discovered how ideas got refined and developed, and became more precise in general.

## **FULL-SCALE CONSTRUCTION + ADDITIONAL RELATED TASKS**

### ***DESIGN BEYOND DESIGN: FULL SCALE CONSTRUCTION IN STUDIO SETTING***

Committing to do a full-scale construction project with our freshman students required that we perform additional tasks beyond a traditional studio. We had to arrange for a place to build and take responsibility for that and related issues. We gave a presentation about foundations, and then tried to inform them of ways they could interface their constructions with the site to make them stable and well anchored. We rented an excavator and dug shallow foundation holes for each project. We provided vehicles to deliver the projects to the site and then took them there. We allowed students to remove ceiling tiles so that they could first construct their work in the studio before transporting it to the site. We guided them to make material lists with prices to see where costs fell. We priced and negotiated with lumberyards for the best wood order for the combined projects. We encouraged them, pushed them hard, and cheered them on so that the final built projects would be as good as was possible. We took every opportunity to raise the quality of the work and to keep it high. When things get built, mediocrity and apathy have no place. In this final phase of building, students learned two more intangible things, responsibility and precision, in a way that is difficult to achieve in a typical studio. The projects would get built and they had to be good. In the end, it rained for a week and dramatically flooded 3 of the sites. Again, the students saw, the kind of responsibility required to pull off a full-scale construction. We built raised walkways in the few days before the final review. In the end, parents came, as well as faculty and professionals. This project, in its entirety, allowed students to experience the full spectrum of the architectural design experience, from conception to occupation of the space and the excitement of the students was palpable.

### ***FINAL EXHIBIT + PRESENTATION***

In the final week, studios are cleared of all personal items and work stations and each studio is required to design an exhibit for the final presentation. They are also required to create a video of the construction process and a final portfolio. Then, based on presentation requirements, each studio must develop a verbal presentation. We require that each student have a speaking role in the presentation. We conduct at least two rehearsals of the presentation with both faculty, the TA, and the studio present. We give notes and they fine-tune what they are presenting. We focus on all aspects of presentation, voice, dress, language, description, clarity, eyes, position of the work, etc.

## **IN SUMMARY**

By ending the Freshman Design Studio with a group initiative, we feel that the focus is shifted from the superstar designer to being part of a team who will listen first and then participate. We have succeeded in slowing them down, channeling their focus, and encouraging a thoughtful and thorough response. They are accustomed to uncertainty as we have consistently asked for things that they could not rely on memory or familiarity to solve. The rigor and critical thinking that our students develop is a desirable trait in most occupations. Many of our students have developed successful careers in architecture, and some have gone on to be successful in other areas. The students who continue on to become architects or designers have a solid introduction and comprehensive beginning experience to better understand how architects think and work. We hope we have imbued them with a sense of passion and urgency and belief that as architects, we can make a difference in our collective future. And we hope we have initiated another happy band of dreamers and makers into the world, ready to challenge the status quo, push the boundaries, and to make the world a better place.

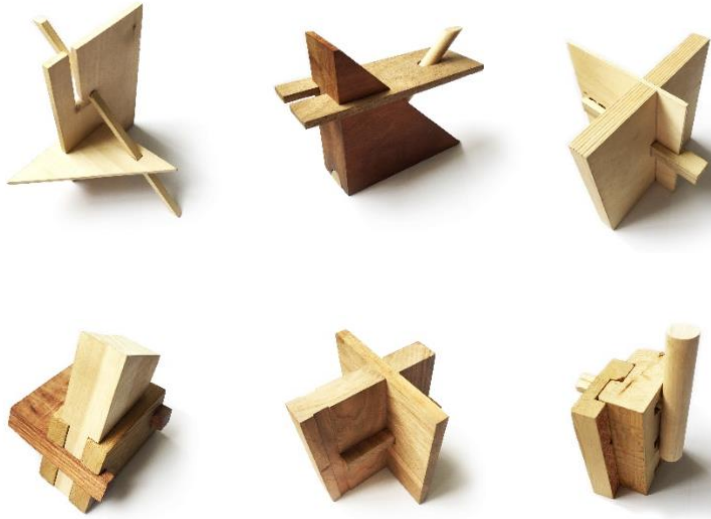


Fig 1. The INTERLOCK



Fig 2. The BODY SUPPORT

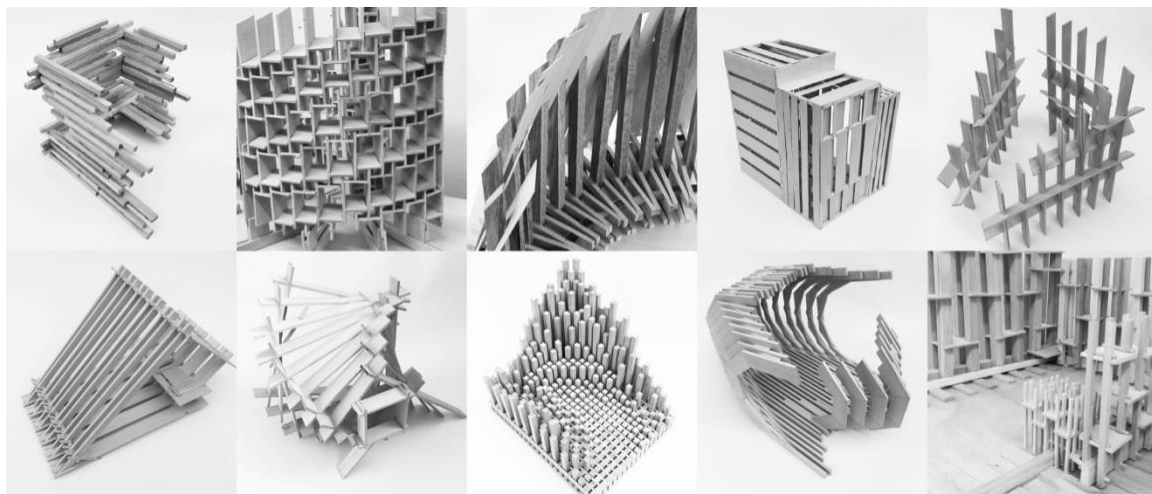


Fig 3. 10 REFLECTION SPACES MOVE FORWARD



Fig 4. FINAL PRESENTAION DRAWINGS



Trussed



Vortex



Armature



Forest



Crescendo



Stacked





Oculus



Pathway



Siloscreen



Vitality



Oculus Detail



Stacked Detail

Fig 5. 10 REFLECTION SPACES

\* Core curriculum originated by and developed with Beth Tauke, Associate Professor

## References

1. Åkerlind, G. S. (2005). Variation and commonality in phenomenographic research methods. *Higher Education Research and Development*, 24(4), 321-334.
2. Anthony, K. (2012). Studio culture and studio life: A world of its own. In J. Ockman (Ed.), *Architecture school: Three decades of educating architects in North America* (pp. 369-401). Cambridge, MA: MIT Press.
3. Bransford, J. D., Brown, A. L., & Cocking, R. R. (Eds). (2000). *How people learn: Brain, mind, experience, and school*. Washington, DC: National Academy Press.
4. diSessa, A. A. (2006). A history of conceptual change research: Threads and fault lines. In R. K. Sawyer (Ed.) *The Cambridge handbook of the learning sciences*, 2nd Ed. West Nyack, NY: Cambridge University Press.